

We Claim

- 1 A process for separating at least 30 % by weight of the polydimethylsiloxane-containing preparation oil from elastane fibers which contain such preparation oils, which comprises
 - a) preparing a mixture of chopped elastane fibers of different titres, comprising fibers with titres in the range of about 11 to about 10,000 dtex and in which the proportion of fibers with a titre less than or equal to 900 dtex is less than 80 % by weight of the total mixture of fibers,
 - b) mixing the chopped elastane fiber mixture with a bath of water in a mixing vessel having rotating mixers at a ratio of water to chopped elastane fibers of at least 5/1 by weight,
 - c) mixing said fiber mixture and said water at a speed of rotation of said rotating mixers of at least 1200 rpm,
 - d) maintaining the mixing vessel contents at a temperature ranging from room temperature to 90°C during said mixing of the fibers and the water,
 - e) continuing the mixing of the fibers and the water for a duration of 10 to 60 minutes, and then
 - f) separating the fiber material from the bath of water.
2. The process of claim 1, wherein the elastane fibers are polyether urethane fibers, polyester urethane fibers or mixtures of polyether-urethane fibers and polyester urethane fibers.

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3. The process of claim 1, wherein the mixing devices consist of at least two stirrer shafts, each having with at least 2 dissolver discs per stirrer, and wherein the ratios of the diameters of the dissolver discs to the diameter of the vessel rang from about 1 to 5 to about 3 to 5.
4. The process of claim 1, 2 or 3, wherein the speed of rotation of the stirrer shafts 3 is at least 2000 rpm.
5. The process of claim 3, wherein the mixture is additionally agitated by an anchor stirrer.
6. The process of claim 5, wherein the speed of rotation of the anchor stirrer is at least 50 rpm.
7. The process of claim 1, 2 , 3, 5 or 6, wherein the weight ratio of water to elastane fiber material in the mixture of fibers and water ranges from 5/1 to 15/1.
8. The process of claim 1, 2 , 3, 5 or 6, wherein the mixing duration of the elastane fiber material and water in the mixing vessel ranges from 15 to 45 minutes.
9. The process of claim 1, 2 , 3, 5 or 6, wherein the temperature of the mixing vessel contents at the start of mixing ranges from room temperature to 70°C.
10. A process for producing elastane spinning solutions from elastane chopped fiber material, preparation oil is first separated from said chopped fiber material, according to the process of claim 1, 2, 3 5, or 6 and, after separation of the fibers from the bath of water the elastane fiber material is dewatered and then dried at a temperature of at least 100°C to a residual moisture content of

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less than 5 % by weight, with respect to its solids content, and is dissolved in a spinning solvent to form a homogeneous elastane spinning solution.

11. An apparatus for the carrying out a process according to claim 1 or 10, comprising at least of a mixing vessel, which optionally includes a heater, and which includes a dispersing unit comprised of at least two stirrer shafts, each of which is provided with at least one dissolver disc.
12. The apparatus of claim 11, wherein said mixing vessel further comprises an anchor stirrer, adapted to be operated at a speed of rotation that is lower than the speed of rotation of said stirrer shafts..
13. The apparatus of claim 11 or 12, wherein the mixing vessel is further provided with an stripping device adapted to remove fiber material from the anchor stirrer.
14. The process of claim 4 wherein said speed of rotation is at least 3000 rpm.
15. The process of claim 6, wherein said speed of rotation is 60 to 100 rpm.
16. The process of claim 7, wherein said ratio is from 5/1 to 10/1.
17. The process of claim 8, wherein said duration is 30 to 45 minutes.
18. The process of claim 10, wherein said residual moisture content is 1 to 3% by weight.
19. The process of claim 18, wherein said residual moisture content is 0.5 to 1.0% by weight.

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20. The process of claim 10, wherein said spinning solvent is selected from the group consisting of dimethylformamide and dimethylacetamide.
21. The process of claim 10 wherein a secondary aliphatic amine is added to said solvent.
22. The apparatus of claim 11, wherein said stirrer shafts are each provided with two dissolver discs.

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